The Pathfinder Village Mobile Market Program

Addressing Health and Nutritional Concerns in Rural New York State

PATHFINDER PRODUCE
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Acknowledgments
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The Pathfinder Village Mobile Market Program

Addressing Health and Nutritional Concerns in Rural New York State

According to the United States Department of Agriculture, food deserts are described as regions of the country that feature “large proportions of households with low incomes, inadequate access to transportation, and a limited number of food retailers providing fresh produce and healthy groceries for affordable prices.” With a population of just over 60,000 residents, many parts of rural Otsego County in upstate New York meet the definition of a food desert, with residents lacking access to healthy, affordable food. In 2015, over 9% of Otsego County residents were reported to be of low income with low access to a grocery store (USDA, 2015). Moreover, 23% of Otsego County adults consumed less than one fruit and less than one vegetable daily compared to 29% for the rest of the state and 31.5% for New York State as a whole (Bassett Healthcare Network, 2019).

People who live in food desert communities may also experience food insecurity, defined by the USDA as lacking “consistent access to enough food for an active, healthy life.” Gunderson and Ziliak (2015) noted that “almost fifty million people are food insecure in the United States, which makes food insecurity one of the nation’s leading health and nutrition issues.”

In 2017, more than 18% of children in Otsego County were reported to experience food insecurity, a rate higher than that of New York state as a whole. Rural counties in the United States also report more persistent poverty than do urban areas. In 2017 the reported rural poverty rate in the U.S. was 16.4% compared to the urban poverty rate of 12.9%.
Rural Food Insecurity and Determinants of Health

Food insecurity that affects both children and adults has increased over the past 20 years and has been shown to have significant negative health impacts on both population groups. Food insecurity across the U.S. is correlated with increased prevalence of chronic health conditions. The most common chronic conditions for adults facing food insecurity are diabetes, hypertension, and arthritis. Not surprisingly, these chronic conditions lead to higher healthcare costs and utilization as well.

U.S. Centers for Disease Control and Prevention researchers have found that the adjusted annual incremental health care costs resulting from food insecurity among older adults were higher compared to those who did not experience food insecurity. Health care costs for food-insecure adults with a specific chronic condition ranged from $10,240 (cancer) to $13,290 (stroke); costs for food-secure older adults with the same chronic condition ranged from $9,030 (hypertension) to $11,900 (stroke). Health care costs for food-insecure adults without the specific chronic condition (counterfactual) ranged from $8,470 (diabetes) to $9,160 (emphysema) and for food-secure older adults without the specific chronic condition ranged from $7,370 (arthritis) to $8,380 (emphysema). Health care costs associated with food insecurity represented 18% of the incremental costs for adults with and without arthritis and 16% for adults with and without hypertension. On average, food insecurity added about 11% to the health care costs of older adults with and without a specific chronic condition (Garcia, 2018).

Food security is characterized by specific behavioral and social emotional characteristics as depicted in Figure 1.0. These characteristics are found in individuals and households based upon their relative level of food security or insecurity.

Adults who are food insecure are at an increased risk for a variety of negative health outcomes and health disparities (www.healthypeople2020.gov, n.d.). For example, one study found that food-insecure adults may be at an increased risk for obesity. Another study found higher rates of chronic disease in low-income, food-insecure adults between the ages of 18 and 65. Food-insecure children may also be at an increased risk for a variety of negative health outcomes, including obesity. These children also face a higher risk of developmental problems when compared with food-secure children. In addition, reduced frequency, quality, variety, and quantity of consumed foods may have a negative effect on children’s mental health.

Many older residents of rural communities also face associated health challenges related to geographic and social isolation. Access barriers may compound unemployment levels, transportation limitations, and available community resources (health care providers, grocery stores, etc.). Such isolation has been linked to loneliness and poor health outcomes. The good news is that “social enterprises” such as mobile food programs, can help to meet social needs as they are commonly rooted within communities. Preliminary research has shown positive psychological and physiological impacts of social enterprise activity on individuals, including increased self-esteem and confidence, improved nutrition, and improved health seeking behavior. Social enterprise activities can counteract factors contributing to social isolation and feelings of loneliness, leading to wider health and well-being benefits for individuals (Kelly, 2019).
Meeting the Challenge: The Pathfinder Produce Mobile Market

Recognizing the challenges associated with healthy food access in Otsego County and neighboring rural counties, Pathfinder Village, a services provider and community for people with Down syndrome, and its research and advocacy center, the Kennedy Willis Center on Down Syndrome, partnered with the Leatherstocking Collaborative Health Partners Performing Provider System to establish the Pathfinder Produce Mobile Market in 2018 (NYS Dept. of Health DSRIP funds). Because the costs of fresh produce and proximity to grocery stores are both factors that limit access to healthy food, a mobile market program was seen as a potentially promising solution to the problems of both fresh produce access and food insecurity.

The mobile market project targeted Otsego County residents with a diagnosed medical condition and who experienced food insecurity. The Pathfinder Produce Mobile Market provided individuals referred to the program with vouchers that paid for fresh produce *Feel Good Boxes* delivered to their homes, along with weekly recipes tailored to delivery contents. The mobile market minimized access barriers, while assuring reliable, consistent availability of fresh produce for families experiencing health challenges and food insecurity. The structure of the Pathfinder Produce Mobile Market was based upon a research-informed, four-pronged strategy that has been shown to reduce food insecurity among rural populations: *accessibility, availability, utilization, and stability*. These food security core components were set as the cornerstone of the program design.

<table>
<thead>
<tr>
<th>Level of Food Insecurity</th>
<th>Food Security Level Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Food Security</td>
<td>No problem or anxiety about food access</td>
</tr>
<tr>
<td>Marginal Food Security</td>
<td>Some problems or anxiety at times re: access to adequate food, but quality, variety and quantity is not substantially reduced</td>
</tr>
<tr>
<td>Low Food Security</td>
<td>Households reduce quality, variety, or desirability of diet, but quantity and eating patterns are not substantially disrupted</td>
</tr>
<tr>
<td>Very Low Food Security</td>
<td>At times eating patterns of 1 or more family members are disrupted and/or food intake is reduced due to lack of money or other food resources</td>
</tr>
</tbody>
</table>
Employment for People with Disabilities

As the Mobile Market program was developed, a closely aligned strategic priority for Pathfinder Village personnel was to increase community outreach and access for people with disabilities. In 2020, the working age employment to population ratio (percent of people 16-64 that are employed) was 17.9% for people with disabilities compared with 61.8% for non-disabled people (Forbes, 2021). From March 2020 to April 2021, unemployment rates for New Yorkers with disabilities averaged 16.2%, an increase of 8.9% from the year before.

Consistent with Pathfinder's slogan “...that each life may find meaning,” the Pathfinder Produce Mobile Market design included both community-based work experience and paid employment for people with disabilities. Job responsibilities were varied and included food deliveries to community locations, supply inventory, and ongoing maintenance of several hoop house garden plots located at Pathfinder Village, Edmeston. By including both volunteer and paid employment opportunities for people with disabilities, the program sought to foster community relationships between Mobile Market customers and individuals with disabilities. At the same time, the Mobile Market was building successful on-the-job work competencies as a path to continued employment for people with disabilities. Specific job descriptions (e.g., inventory, pricing, cash register) and outlined job duties informed both employee training and on-the-job supervision for the individuals with disabilities who staffed the market.

Rooted in the Community: Pathfinder Produce

Following the closure of local grocery stores in Edmeston and other nearby communities, Pathfinder Village leadership team members had noted and discussed the lack of access to fresh produce for area community residents. The organization was already an active participant in a health and wellness focused “5210 program” in collaboration with the Edmeston public school district and Bassett Healthcare, and Village leaders opened a small, weekly produce market located at its Village Commons building in 2013.

The new “Pathfinder Produce” market not only provided work and training opportunities for individuals with intellectual and developmental disabilities, but also helped to address the limited access to fresh produce in the local community. Well-received by area residents who shopped there, the weekly market was just the beginning of Pathfinder’s vision to address a local demand for fresh produce while reducing food insecurity.

Over the next several years Pathfinder fine-tuned its early market initiative. Village leaders knew that the organization had more to offer to employment-ready individuals and to those community members with disabilities on a path to employment. From early beginnings with the campus-based produce market, the vision for the Mobile Market expanded over several years through key partnerships with Bassett Healthcare...
Network, DSRIP funding, and private donors’ support. A vehicle purchase in 2018 and a specialty project serving the Lantern Hill residential community in Oneonta in 2019 affirmed Pathfinder Village’s role as a key partner in efforts to address food insecurity in the region.

**Mobile Market Program Structure and Goals**

The Pathfinder Village Mobile Market set several key goals:

- To increase outreach to food-insecure and health compromised families and individuals via partnerships with area health care providers, including Bassett Healthcare Network
- To engage Pathfinder Village and area community residents with disabilities in meaningful pre-employment and employment activities
- To encourage program recipients to make healthy food choices through the development of a customized online-sales platform with weekly recipes
- To sell or donate locally grown produce and/or regionally sourced fruits, vegetables, pantry items and baked goods to local restaurants and area food pantries

The Pathfinder team set specific goals for the program, not only for children and adults who were recipients of *Feel Good Box* each week, but also for individuals with intellectual and developmental disabilities who staffed and supported the Mobile Market outreach activities. Offering on-the-job vocational experience for young adults with disabilities, as well as paid employment opportunities for job ready individuals with disabilities, was a cornerstone of the Mobile Market plan.

As shown in Figure 2.0, four core components of the Mobile Market program’s design informed decisions regarding program locations, activities, *Feel Good Box* contents, and various educational resources provided to Mobile Market program participants.

**Figure 2.0 Pathfinder Village Mobile Market Four Core Components**

- **ACCESS**: Children and adults have physical and economic access to food at all times.
- **AVAILABILITY**: A readily accessible supply of nutritious, safe food is adequate for children and adults.
- **STABILITY**: Availability of healthy foods is supported through consistent, reliable processes.
- **UTILIZATION**: Foods are supplemented with cooking utensils and practical information such as recipes and easy-to-follow instructions.
Building upon these four core concepts, Pathfinder Village embarked upon a phased development of the Mobile Market over a period of several years. During that time, the organization joined with key community partners to address not only food insecurity, but also to demonstrate the employment potential and value of people with intellectual and developmental disabilities who would become the market staff.

Figure 3.0 outlines the chronology of the Mobile Market development including staffing, key community partnerships, funding, and expansion to include pop-up produce markets throughout Otsego and its neighboring counties.

As the program developed, Pathfinder leaders recognized that for the Mobile Market concept to be successful, the team needed to design a model that would address the core factors that contribute to food insecurity. Identifying a solution that would produce meaningful work for people with disabilities, and also tackle availability, accessibility, utilization, and stability of fresh and healthy food choices was key. Additionally, isolation, loneliness, and stressors such as the lack of stable food supplies and resources were known to contribute to poor health outcomes among residents of poorer communities, older adults, and those who live in rural areas that may lack reliable transportation. In 2018, the Pathfinder Village Mobile Market and its Feel Good Box concept was born.

Figure 3.0 Pathfinder Village Mobile Market Development Chronology
Key activities and components of the program addressed the four elements of food security:

- **Access:** Door-to-door delivery of *Feel Good Boxes* increased consistent access to fresh produce and helped forge personal relationships between program participants and market staff.

- **Availability:** Healthy living tips, personal contacts and personalized cards supplemented *Feel Good Box* fresh produce contents delivered each week.

- **Utilization:** Simple, easy-to-follow recipes, cooking supplies, and utensils increased participant knowledge, confidence, and interest in healthy, family meal preparation.

- **Stability:** Consistent deliveries throughout the COVID-19 pandemic assured reliable access to healthy foods, with adjustments as needed if household composition or family locations changed.

*Feel Good Boxes* were prepared using a tiered-model design based upon household size (single, couple, family of 3+). Each box came with a weekly supply of fresh fruits and vegetables with easy-to-follow recipe cards, healthy tips, and perhaps the most favored item – personalized feel-good cards that showcased beautiful artwork and self-affirming quotes, uniquely designed by members of Pathfinder’s Adult Day Service program. Boxes were delivered by Mobile Market staff that included paid employees with and without disabilities, as well as pre-vocational job trainees. The personalized deliveries became an essential aspect of the program as relationships between food box recipients and Mobile Market staff formed through consistent weekly visits.
Project Outcomes 2020

During the period 2018-2020, the Pathfinder Produce Mobile Market delivered weekly, door-to-door Feel Good Boxes to over 150 households, inclusive of 280 adults and children. Pathfinder’s Mobile Market also hosted numerous pop-up markets and give-away food distribution events, and supported large deliveries to several local food pantries in Richfield Springs and Oneonta. The program’s success was tracked through ongoing surveys of participants and the compilation of survey data results.

Participant retention, behavioral and health outcomes from 2019-2020 were significant. Of 100 families initially enrolled, more than 80% successfully completed the program. Families described positive behavioral changes and healthier food choices. More than 50% of program participants reported eating at least 3-4 servings of fruits and vegetables daily, and more than half of program participants reported feeling healthier while participating in the program. Self-report surveys completed by participants documented that more than 75% of participants said they had decreased their fast-food consumption while enrolled in the program.

A comparison of participant survey data showed measurable changes in such areas as meal preparation and the incorporation of fruits and vegetables in daily food intake over a 6-month period while participating in the Mobile Market program. See Tables 1.0 and 1.1.

Changes in dietary choices, as well as in meal planning and preparation activities were reported by program participants in follow-up surveys conducted by Pathfinder Produce personnel. Over 81% of respondents stated that they were eating more locally grown foods, 76% reported eating healthier snacks, and 67% reported consuming less sugar. See Table 2.0 which summarizes final, self-reported data of 34 program participants.

Children’s food choices also were reported to be improved, with 88% of children whose families were enrolled in the program reporting that they had increased their fruit and vegetable consumption. Finally, a measurable positive impact on participant health was also reported, with the number of emergency department visits and hospitalizations reduced by 23.3% for participants enrolled in the program.

Table 1.0 Frequency of Meal Preparation: Initial vs. 6-Month Survey

<table>
<thead>
<tr>
<th>How often do you prepare at least part of a meal?</th>
<th>Initial Survey</th>
<th>At 6 months</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 days per week</td>
<td>8.9%</td>
<td>9.3%</td>
<td>+0.4%</td>
</tr>
<tr>
<td>3-4 days per week</td>
<td>17.8%</td>
<td>20.9%</td>
<td>+3.1%</td>
</tr>
<tr>
<td>5-6 days per week</td>
<td>17.8%</td>
<td>18.6%</td>
<td>+0.8%</td>
</tr>
</tbody>
</table>

Pathfinder Village 2020 Survey of Mobile Market Participants
Table 1.1 Change in Daily Intake of Fruits and Vegetables

<table>
<thead>
<tr>
<th>How many servings of fruits and vegetables do you eat per day?</th>
<th>Initial Survey</th>
<th>At 6 months</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 days per week</td>
<td>57.8%</td>
<td>42.8%</td>
<td>-15.0%</td>
</tr>
<tr>
<td>3-4 days per week</td>
<td>26.7%</td>
<td>56.3%</td>
<td>+29.6%</td>
</tr>
<tr>
<td>5-6 days per week</td>
<td>8.9%</td>
<td>2.1%</td>
<td>-6.8%</td>
</tr>
</tbody>
</table>

Pathfinder Village 2020 Survey of Mobile Market Participants

By 2020, each week *Feel Good Boxes* reached over 150 families in 16 villages and towns throughout Otsego County.

Table 2.0 Self-Reported Health Changes of Pathfinder Village Mobile Market Recipients

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>I feel healthier</td>
<td>64.1%</td>
</tr>
<tr>
<td>I choose to buy healthier food at the grocery store</td>
<td>71.8%</td>
</tr>
<tr>
<td>My health-related medical improvements are better</td>
<td>41.2%</td>
</tr>
<tr>
<td>I feel like I visit the doctor less often</td>
<td>46.2%</td>
</tr>
<tr>
<td>I feel like a happier person</td>
<td>61.5%</td>
</tr>
<tr>
<td>I have eaten less fast food since beginning the program</td>
<td>78.8%</td>
</tr>
<tr>
<td>Shopping for groceries is easier</td>
<td>89.7%</td>
</tr>
<tr>
<td>I notice health-related improvements in my children</td>
<td>60.0%</td>
</tr>
<tr>
<td>I feel that my children eat more fruits and vegetables</td>
<td>94.1%</td>
</tr>
<tr>
<td>My children eat healthier snacks.</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

*Survey of recipients (n=34) after completing the program.*
Project Summary

Pathfinder Village, in collaboration with community health and business partners, sought to increase the availability, accessibility, stability and utilization of fresh fruits and vegetables to residents of rural upstate New York through the Pathfinder Produce Mobile Market. Pathfinder Village also sought to provide on-the-job, community-based, paid employment experiences and unpaid pre-employment activities to more than 12 individuals with intellectual disabilities who staffed the Mobile Market.

The initial project demonstrated measurable improvements in program participants’ access to fresh produce, as well as in their awareness of the benefits of including fruits and vegetables in their meal planning and preparations. The project also showed measurable decreases in two key health measures: emergency department use and hospitalization among participants during the program period.

Employees and volunteers with the Mobile Market reported positive outcomes from their involvement with the project. Not only did more than 12 individuals with disabilities gain valuable job experience by preparing and delivering *Feel Good Boxes*, but they also developed friendships and created community linkages through their work. Behind the scenes, the Mobile Market staff also grew produce in three hoop houses located at Pathfinder Village to augment the supply of locally sourced produce and food products. Without these key employees and volunteers, the Mobile Market would not have achieved such success.
Lessons Learned and Looking Ahead

The work to strengthen the accessibility, availability, utilization, and stability of locally sourced healthy foods in rural upstate New York has just begun. Over the next year, Pathfinder Village will partner with two Bassett Healthcare Network local clinics to further extend its reach to more food-insecure and chronically ill individuals. Clinical data will capture critical outcome measures to fully evaluate the program's impact. The organizations’ goal is to demonstrate both programmatic and medical outcomes to validate the model for future replication and long-term funding.

Prescription Food Program: Building upon the program’s initial success, Pathfinder Village and Kennedy Willis Center leaders have taken steps to introduce a prescription food program to area residents in collaboration with local physicians associated with the Bassett Healthcare Network in Otsego and Chenango counties. Once underway, participants may be referred by local physicians, with priority given to patients with diagnoses of hypertension, obesity, pre-diabetes, or diabetes. Health improvements will be tracked through the monitoring of lab values, weight changes, and blood pressure metrics. The core components of Feel Good Boxes, food information, practical guidance, and social connectivity for at-risk populations will provide a solid foundation for this expansion of the Mobile Market initiative.

Kitchen on the Go: Pathfinder Village also hopes to further its outreach through an innovative Kitchen on the Go project that will highlight food concepts that are “good for children, good for growers and good for the environment.” Research has shown a decline in both agricultural awareness and cooking skills and knowledge, especially across younger generations. Recent studies suggest children are less likely to be able to perform basic cooking skills, identify kitchen tools, and tend to seek out more non-home prepared meals. Often, these choices are limited to nutrient-poor pre-packaged or fast-food options, which can lead to higher levels of childhood health problems.

This innovative project will center on a hands-on approach to introduce children to agriculture and food careers through school and community sessions. School districts within Chenango and Otsego counties will have the opportunity to take part in school-based Kitchen on the Go activities and cooking presentations. Food preparation and demonstrations by Mobile Market personnel via a mobile kitchen cart, sponsored by natural foods-maker Chobani, will illustrate the link between fresh food access and improved physical and emotional-social health.
Deborah’s Story: Deborah lives in an apartment on her own and has been struggling with orthopedic issues, COPD and a mental health diagnosis. She has no transportation and has physical difficulty transporting groceries. She has had a neighbor assist with shopping in the past. She is on an Social Security Disability income and struggles financially which has been a stressor.

She has reported being profoundly impacted by the Mobile Market. She said she looks forward to the delivery every week, and enjoys the notes and recipe cards that come with the deliveries. She has been eating much healthier and has reported losing 20 lbs. in the last few months, which has improved her feelings of well-being and her mental outlook.

The Challenge for Others: Replication and Expansion

Deborah’s story is just one example of Pathfinder Village Mobile Market’s positive impact on residents in rural upstate New York. The positive outcomes of access to a stable supply of quality, fresh food for children and adults in rural areas are well documented by researchers, educators, and community health professionals. Food insecurity has life-long impacts on children’s development, physical health, and emotional well-being, while exacerbating such pediatric and adult chronic health conditions as diabetes, asthma, and cardiac health. Hands-on outreach, social connections, nutritious food availability, and community partnerships can minimize food insecurity and be significant steps to improving health and wellness for children and adults who live in rural communities throughout the United States.

What began as Pathfinder’s goal to expand employment opportunities for people with disabilities evolved to become a successful project that reduced food insecurity for people in rural upstate New York. By 2021, Pathfinder Produce Mobile Market was a major supplier of fresh produce to people in need throughout Otsego County with measurable, positive impacts on hundreds of families in the region. Along the way, the program fostered meaningful relationships between people with and without disabilities. The friendships that developed between Mobile Market employees and Feel Good Box recipients became an unexpected outcome to celebrate.

The Pathfinder Produce story offers any business, community group, or organization a demonstrable model that can be replicated in communities throughout the U.S. Every community has untapped resources that could be leveraged in similar ways to benefit people who experience food insecurity. These resources include often marginalized groups, including people with disabilities, retirees, and the unemployed whose sweat equity can be harnessed as an essential program resource. By initiating similar projects that are grounded “in the community, with the community and for the community,” rural food insecurity can be reduced and eventually eliminated.
References


For more information about Pathfinder Village and the Pathfinder Produce Mobile Market, contact Brittany Goodrich, Director, the Kennedy Willis Center on Down Syndrome or visit the Pathfinder Village website at pathfindervillage.org.

Founded in 1996, The Kennedy Willis Center on Down Syndrome is Pathfinder Village’s research and advocacy center that supports ongoing studies in collaboration with universities and medical/human service professionals on developing best practices for supporting people with Down syndrome and related disabilities. Through the Center’s services and past studies, Pathfinder Village has made important refinements in its aging, wellness and staff training programs over 25 years. Pathfinder Village is a forward-thinking services provider and residential community in Edmeston, New York, that creates opportunities for and supports individuals with Down syndrome and other disabilities.
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